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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/161,294	09/28/1998	TETSUNOBU KOCHI	35.C12980	7439
5514	7590	09/19/2006	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			NGUYEN, LUONG TRUNG	
			ART UNIT	PAPER NUMBER
			2622	

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/161,294	<b>Applicant(s)</b> KOCHI, TETSUNOBU	
	<b>Examiner</b> LUONG T. NGUYEN	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 3 and 15-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 and 15-18 is/are allowed.
- 6) ☒ Claim(s) 19-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to newly added claims 19-25 filed on 6/29/2006 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

2. Claims 20, 24 are objected to because of the following informalities:

Claim 20 (line 2), claim 24 (line 2), "the same sides" should be changed to --the same side--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDaniel et al. (US 4,996,413) in view of Throngnumchai (US 6,449,014).

Regarding claim 19, McDaniel et al. discloses a photoelectric conversion apparatus comprising:

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a plurality of pixels arranged two-dimensionally, each of said plurality of pixels includes a photoelectric conversion element (detector element 40', figure 3, column 4, lines 590-60);

a plurality of first signal lines for reading out signal from said plurality of pixels (column signal lines 47, 49, figure 3, column 4, lines 49-67);

a plurality of output terminals (output terminals 47, 49, figure 3, column 4, lines 49-67) provided to output the signals on said plurality of first signal lines, said plurality of output terminals being arranged on opposite sites of an area in which said plurality of pixels are arranged (output terminals 47, 49 are arranged on the opposite sites of area of detector element 40', 40'', figure 3).

McDaniel et al. fails to specifically disclose amplifying means, and a plurality of current sources for supplying currents to said plurality of first signal lines, each of said plurality of said current sources being a portion of said amplifying means, and said plurality of current sources being arranged on opposite sides of said area. However, Throngnumchai teaches an imager sensor, which includes plurality pixels FC1 and current sources I connected to data lines DL1, DL2, ..., DLm at the side of output line OL (figures 1, 8, column 5, lines 40-42, column 11, line 28 - column 12, line 2). And Official Notice is taken that such an amplifying means is included in each pixel FC1 to amplify signal generated in pixel FC1. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in McDaniel et al. by the teaching of Throngnumchai in order to control the direction of signal transferred in signal transfer lines.

Regarding claim 20, Throngnumchai discloses the plurality of current sources are arranged on the same sides as those of said plurality of output terminals (figure 8 shows that current sources I are arranged on the same side with output line OL).

Regarding claim 21, McDaniel et al. discloses the plurality of current sources are arranged alternately on the opposite sides for every first output line (figure 3 shows that outputs 47, 49 plurality of current sources are arranged on the opposite sides, therefore the current sources plurality of current sources are arranged on the opposite sides).

5. Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDaniel et al. (US 4,996,413) in view of Throngnumchai (US 6,449,014) further in view of Kuroda et al. (US 6,512,543).

Regarding claims 23, 22, McDaniel et al. discloses a photoelectric conversion apparatus comprising:

a plurality of pixels arranged two-dimensionally, each of said of plurality of pixels includes a photoelectric conversion element (detector element 40', figure 3, column 4, lines 590-60);

a plurality of first signal lines for reading out signal from said plurality of pixels (column signal lines 47, 49, figure 3, column 4, lines 49-67);

a plurality of output terminals (output terminals 47, 49, figure 3, column 4, lines 49-67) provided to output the signals on said plurality of first signal lines, said plurality of output terminals being arranged on opposite sites of an area in which said plurality of pixels are

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arranged (output terminals 47, 49 are arranged on the opposite sites of area of detector element 40', 40'', figure 3).

McDaniel et al. fails to specifically disclose wherein each of said plurality of first signal lines is provided with said constant current source so that a plurality of said constant current sources provided to said plurality of first signal lines, respectively, are arranged on opposite sides of said area. However, Throngnumchai teaches an imager sensor, which includes plurality pixels FC1 and current sources I connected to data lines DL1, DL2, ..., DLm at the side of output line OL (figures 1, 8, column 5, lines 40-42, column 11, line 28 - column 12, line 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in McDaniel et al. by the teaching of Throngnumchai in order to control the direction of signal transferred in signal transfer lines.

McDaniel et al. and Throngnumchai fail to specifically disclose amplifying means provided with a MOS transistor is arranged so that a gate potential thereof changes in accordance with charges generated in said photoelectric conversion elements, and a source follower circuit including a constant current source. However, Kuroda et al. teaches a sensor in which each pixel 32 comprises a driving transistor 35 and a source follower load transistor 44; note that the gate of transistor 35 is connected to the photoelectric conversion/storage section 33 (figure 4, column 9, lines 45-65). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in McDaniel et al. and Throngnumchai by the teaching of Kuroda et al. in order to amplify signal charge before reading out.

Regarding claim 24, Throngnumchai discloses the plurality of current sources are arranged on the same sides as those of said plurality of output terminals (figure 8 shows that current sources I are arranged on the same side with output line OL).

Regarding claim 25, McDaniel et al. discloses the plurality of current sources are arranged alternately on the opposite sides for every first output line (figure 3 shows that outputs 47, 49 plurality of current sources are arranged on the opposite sides, therefore the current sources plurality of current sources are arranged on the opposite sides).

***Allowable Subject Matter***

6. Claims 3, 15-18 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 3, the prior art of the record fails to show or fairly suggest an image pickup apparatus comprising a first horizontal output line which outputs sequentially the signals from said plurality of first vertical output lines; a second horizontal output line which outputs sequentially the signal outputted from said plurality of second vertical output lines, wherein said first horizontal output line is arranged on a side of a first side of said photoelectric conversion area, said second horizontal output line is arranged on a side of a second side of said photoelectric conversion area, and said first side and said second side of said photoelectric conversion area are opposite to each other in the vertical direction; a plurality of first load elements, wherein at least one first load element is arranged to fix a direction of current flowing through each of said plurality of first vertical output lines; and a plurality of second load

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elements, wherein at least one second load element is arranged to fix a direction of current flowing through each of said plurality of second vertical output lines, and wherein said plurality of first load elements and said plurality of second load elements are arranged on sides opposite to each other with respect to said photoelectric conversion area.

Claims 15-18 are allowable for the reason given in claim 3.

### *Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **LUONG T. NGUYEN** whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

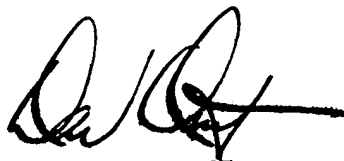


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN LN  
09/17/06

A handwritten signature in black ink, appearing to read 'David Ometz', with a stylized flourish extending to the right.

DAVID OMETZ  
SUPERVISORY PATENT EXAMINER